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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,360	07/17/2003	Chung-Fan Chiou	Q76519	8933
23373	7590	03/07/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			LEVKOVICH, NATALIA A	
			ART UNIT	PAPER NUMBER
			1743	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/620,360

Applicant(s)

CHIOU ET AL.

Examiner

Natalia Levkovich

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-29 is/are pending in the application.
- 4a) Of the above claim(s) 26-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-13 and 15-29 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/17/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's amendments and remarks dated 12/28/2005 have been acknowledged by the Examiner and entered. Claim 14 has been canceled; claims 1-13 and 15-29 are pending in the instant application.

Election/Restriction

2. Newly submitted claims 26-29 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The inventions are distinct, each from the other because of the following reasons:

Claims 1-3 and 15-25 (invention I) are directed to a reactor;

Claims 26-29 (invention II) are directed to a method of enhancing hybridization efficiency.

Inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used as, for example, a sample storage.

Since Applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 26-29 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

3. In light of latest amendments, the drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the 'first member embedded with a biochip' (as recited in the amended claim 1), the first member which comprises a biochip (as recited in the claim 25) and "one electrode on the second member corresponding to the pair of electrodes on the second member' (as recited in the amended claim 10) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.
5. The previous rejection of claim 10 under 35 U.S.C. §112 second paragraph is withdrawn, in light of the latest amendments.
6. Claim 1-13 and 15-29 are rejected under 35 U.S.C. 112, second paragraph, as being unclear for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The amended claim 1 recites that 'the first member is embedded with a biochip'. It is not clear whether the first member is a part of the biochip, or the two elements are both embedded into an unspecified structure.

As amended, claim 16 still does not clearly set forth whether the second fillister is located on the first or on the second member, the structural inter-relations between the

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two fillisters remaining unclear. Additionally, should the biochip be considered a part of the first member?

With respect to claim 25, the structural inter-relations between the biochip, the 'reaction region' and the first member are not clearly set forth, which renders the claimed structure indefinite.

Claim Rejections - 35 USC § 102

7. Claims 1-13 and 16-25 are rejected under 35 U.S.C. 102(e) as anticipated by Zhao et al. (US 20020079219).

Zhao discloses a micro-fluidic chip which includes substrate 18 ['second member' – Ex.] comprising micro-channel 14 ['fillister' – Ex.], cover 20 ['first member' – Ex.] and electrodes 28 located both on the cover and in reservoirs 14 and 26 (see Figure 2).

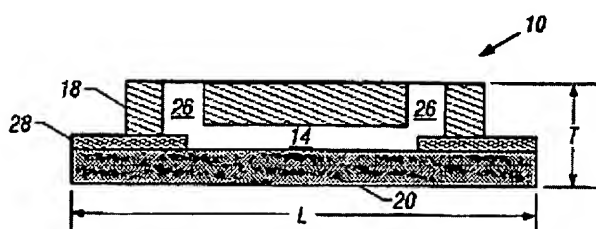


FIG. 2

With respect to claims 2-4 and 17-19, Zhao teaches that "suitable materials for the cover and substrate include but are not limited to glass, silica, ceramics, silicon, and polymers such as acrylics, polycarbonate, polystyrenes, noncyclic and polycyclic olefins such as polynorbornenes, and other polymers which are suitable for molding or forming. The cover may also be printed circuit board"(See [0057]).

Referring to claims 6-8, Zhao discloses in [0111] that samples may comprise nucleic acids.

As to claims 12 and 24, Zhao teaches that electrodes can be made of platinum, gold, etc. (See [0006]).

In regards to claim 15, Zhao teaches in [0047] that microarrays “may be formed in both the substrate and the cover. The parts may then be bonded together to form the microfluidic device of the present invention”. In [0057] Zhao teaches that the cover and substrate may be integrally molded.

Referring to claims, 5 and 20, Figure 2 also shows wells 26 [‘at least two openings’ – Ex.].

Claim Rejections - 35 USC § 103

8. The 35 U.S.C. §103(a) rejection of claims 5 and 20 is withdrawn, in light of latest amendments.

Response to Arguments

9. Applicant's arguments dated 12/28/2005 have been fully considered but they are not persuasive and moot in view of new grounds of rejection.
conducting hybridization assays.

Applicant argues that the device of Zhao ‘does not include a microarray or biochip for hybridization’. Examiner disagrees. As was discussed in the prior office Action, Zhao teaches in [0047] that microarrays “may be formed in both the substrate

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and the cover." In [0003] Zhao teaches that "microarrays or Bio-chips are used to conduct hybridization assays for sequencing and other nucleic acid analysis".

Conclusion

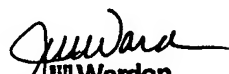
10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Levkovich whose telephone number is 571-272-2462. The examiner can normally be reached on Mon-Fri, 8 a.m.-4p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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